

REMARKS/ARGUMENTS

Claims 3-10 are pending. Claims 6-10 were withdrawn pursuant to a restriction requirement. Claim 3-5 are subject to examination. Claims 3 and 4 have been amended and no new matter has been introduced. Reconsideration is respectfully requested.

In the Office Action mailed September 12, 2007, claims 3-5 were rejected as follows. Claims 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi et al. (US Patent No. 5,882, 122). Claim 5 is rejected under 35 U.S. C. 103(a) as being unpatentable over Noguchi in view of McAllister et al. (US Patent No. 4,054, 334). Additionally, claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete.

Applicant has amended claims 3 and 4 to more particularly set forth the invention. Support for the amendment can be found throughout the specification, and the drawings, for example, paragraph [0043] as previously amended and Figures 1-4. No new matter has been introduced.

Applicant respectfully traverses all of the Examiner's rejections. Noguchi and McAllister, even if combined, fail to disclose or suggest all limitations of claims 3-5.

A. Claim 3

More particularly, claim 3 recites a method of manufacturing a pivot assembly, which includes, in part, mating a first ball bearing to a lower end of a shaft to form a first structure and mating an outer circumference of a second ball bearing to an upper end of a sleeve having an inner wall part to form a second structure. The method also includes, after the first structure and the second structure have been formed, mating the first structure to the second structure, which is accomplished by mating the second ball bearing to an upper end of the shaft and mating the lower end of the sleeve to an outer circumference of the first ball bearing so that the inner wall part is disposed between the first and the second ball bearings. Noguchi fails to disclose or suggest these claim limitations.

Specifically, Noguchi fails to disclose or suggest forming the first structure including the first ball bearing and the shaft and forming the second structure including the second ball bearing and the sleeve, as recited in claim 3. Noguchi also fails to disclose or suggest to mate the first structure and the second structure. In fact, Noguchi not only fails to disclose or suggest the particular sequence of steps recited in claim 3, Noguchi also teaches that the ball bearings are not directly fixed to the shaft member, but indirectly. Further, in contrast to the method recited in claim 3 of the present invention, Noguchi teaches that ball bearings are loosely fitted to the shaft and the sleeve. In particular, Noguchi col. 24, lines 3-14 describes the following fixing method.

Here, in the embodiment shown in FIG. 6, the inner races 1 are not directly but indirectly fixed to the shaft member 7 as follows. In order to fix the inner races 1 in the axial direction in the condition in which the inner races 1 are subjected to a preload, bushes 29 are made to abut on end surfaces of the two inner races 1 from the axial direction, and the bushes 29 are fixed to the shaft member 7 by laser welding or bonding to thereby fix the inner races 1 to the shaft member 7 indirectly.

In this manner, not only the outer races 2 can be loosely fitted to the sleeve 27 but also the inner races 1 can be loosely fitted to the shaft member 7....

Therefore, the method as recited in claim 1 is different from the method taught in Noguchi.

Additionally, Noguchi fails to disclose or suggest mating a seal member to the upper end of the shaft to cover an outer end face of the second ball bearing and imparting a preload pressure to the inner ring of the second ball bearing by applying pressure on the seal member, as recited in claim 1. The Office Action appears to be mistaken in alleging that Noguchi teaches:

mating a seal member (29) to the upper end of the shaft to cover an outer end face of the second ball bearing (covers the end of member 1 of the second ball bearing); and
imparting a preload pressure to the inner ring of the second ball bearing (1) by applying pressure on the seal member (29) (col. 24, lines 3-10). Office Action, page 2, last paragraph and page 3, first paragraph.

However, as shown in FIG. 6 and col. 24, lines 3-10 in Noguchi, bushes 29 are made to abut on end surface of the two inner races 1. That is, bushes 29 only abut an end surface of the inner races, but do not cover an outer end face of the second ball bearing.

Moreover, in Noguchi, the bushes 29 are fixed to the shaft member 7 by laser welding or bonding to thereby fix the inner races 1 to the shaft member indirectly. See Noguchi, col. 24, lines 9-11. Thus, Noguchi does not teach or suggest imparting a pre-load pressure to the inner ring of the second ball bearing by applying pressure on the seal member, as recited in claim 3.

Therefore, the method as recited in claim 1 distinguishes from the method taught in Noguchi for at least the above reasons. Accordingly, Claim 3 is not anticipated by Noguchi.

B. Claims 4

In response to the 35 U.S.C. 112 rejection, claim 4 has been amended to recite fixing the sharp edge at the point using a laser welding process while maintaining the pre-load. Thus Applicant believes that the rejection under 35 U.S.C. 112 has been overcome. With regard to the rejection under 35 U.S.C. 103, in light of the above discussion in connection with claim 3, claim 4 is allowable for substantially the same reason as claim 3, and particularly for the specific features claim 4 recites.

C. Claim 5

In light of the above, claim 5 allowable for substantially the same reason as claim 3, and particularly for the specific features claim 5 recites.

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PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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